

## 4.0 BUILDING DESIGN

### 4.1 Introduction

Buildings form a major part of the public realm and provide edges to streets and public spaces. A high quality building design is an important component of attractive streetscapes and site development. Building design must consider the site context, proposed uses, the major components of the building and subtle details which create character and charm.

These guidelines do not advocate a particular architectural style. They provide for many architectural styles but do require the designer to consider the key building elements and form that affects the public realm and the use of the building.

### 4.2 Siting Buildings in a Neighbourhood

#### Rationale

Within the city, there are properties that because of their location can be used to create an interesting feature building along the street. Corner properties, properties at the end of a “T” intersection or properties located at a bend in the road have the potential to be viewed from a distance and thereby create a recognizable landmark unique to that neighbourhood.

These properties can benefit from site design and a building design that focuses attention towards a well articulated structure and avoids placing parking at highly visible locations.

#### Guidelines

1. Buildings should be sited to frame streets and terminate vistas. Attention should be placed on the massing of the building and the building detailing to create a landmark structure.



Commercial building frames the street, and includes landmark clock tower at major street intersection

2. Buildings that are located on prominent sites should receive special design attention and be designed with appropriately scaled exterior public space near the building entrances.
3. Prominent intersections should be enclosed by locating buildings close to the street.
4. Corner buildings should be designed so that each street façade of the building is compatible with one another.
5. Entrances to corner buildings should be close to or at the corner.



Apartment building addresses the street corner

### 4.3 Microclimate Design

Building size, height and placement on a site all have an impact on how the pedestrian space and adjacent properties are used. Possible impacts include wind levels at grade, shadow casting and snow loads. The location and size of buildings on a site should be such that they minimize the adverse impacts on the microclimate of the adjacent buildings, streets and the comfort level of pedestrians using open areas of the site.

Building design should focus on the creation of pedestrian areas at grade that receive a significant level of sunshine but are sheltered from adverse wind and snow conditions.

### Rationale

**Guidelines**

1. Sheltered pedestrian spaces should be provided at all major building entrances.



Main entrance to apartment building sheltered by large canopy

2. Buildings and outdoor spaces should be oriented to maximize sunlight to pedestrian areas during the cooler months of the spring and fall. Buildings should be oriented in an east-west direction to maximize solar gain.

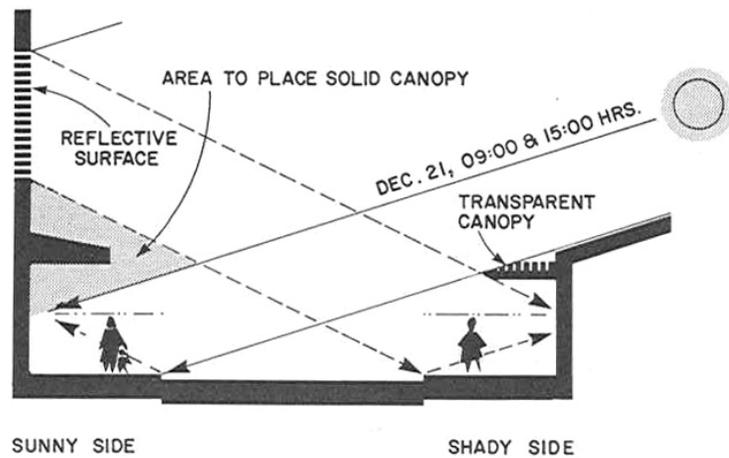


Image shows the geometry of an east/west street to ensure direction illumination of both sides during winter solstice at 09:00 and 15:00 (the canopy on the shady side is transparent to allow reflected light from the sky to penetrate)

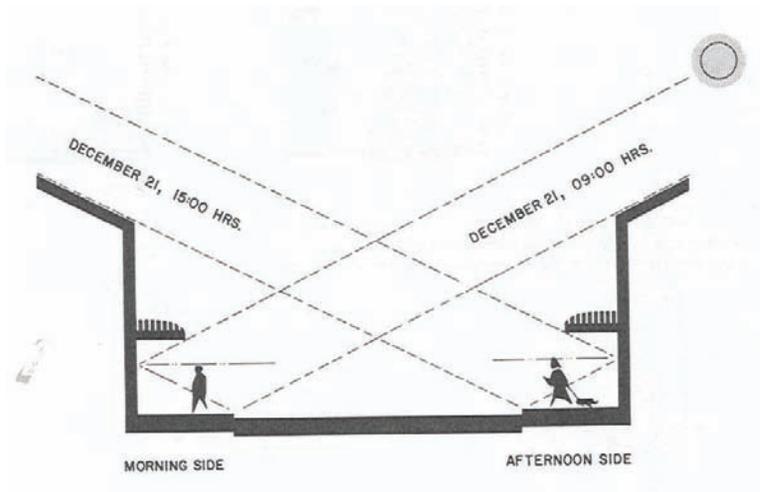


Image shows geometry of a north/south street to ensure direction illumination of both sides during winter solstice at 09:00 and 15:00 (if canopies are constructed, they should be transparent to allow penetration of light reflected from the sky)

3. Building should be sited and massed to avoid undesirable wind conditions at grade for pedestrians.

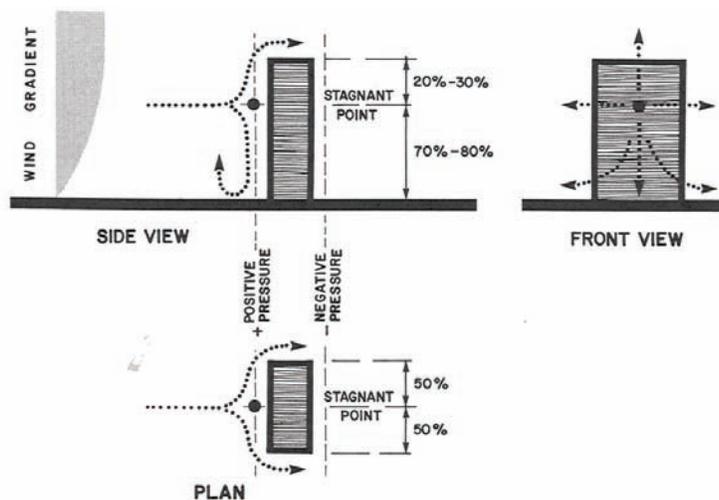
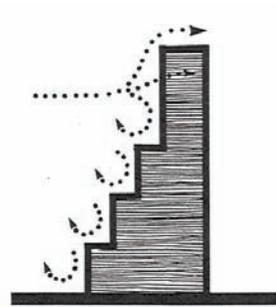
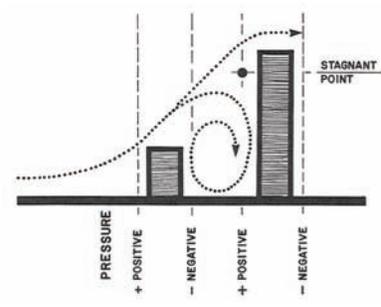


Image showing the aerodynamics of tall buildings

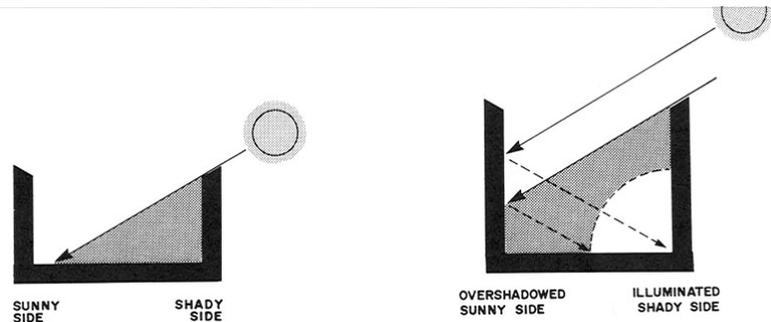


Stepped building facades reduce the impact of downdraft



Downdraft created between two buildings

- Building should be designed so that shadows cast onto public and private outdoor spaces located on adjacent properties are minimized. The intent is to provide for the use and enjoyment of outdoor spaces during summer afternoons and evenings.



Left example shows two sides of an east/west street for a low rise building, right example shows impact for high-rise development

- Pedestrian areas and exposed building surfaces should have some shading during the warmest summer months. This can be achieved by using building elements or by creating a landscaped environment of drought tolerant native species.

1. Shadow, snow deposition and wind conditions studies may be required by the City in support of site plan approval or zoning by-law amendment applications where adverse microclimate conditions may be created given building siting, height, massing and adjacent activities. Shadow studies should assess the impact of building height, mass and location on shadows cast on adjacent residential amenity areas, public open space, public sidewalks, and the face of residential buildings.
2. Shadow studies should be generated for December 21<sup>st</sup> and June 21<sup>st</sup> at 10:00 am, 12:00pm, 2:00pm and 4:00pm conditions.
3. The City of Hamilton latitude and longitude is as follows:
  - Latitude: N 43 degrees – 14’-30”
  - Longitude: W 79 degrees – 51’-00”
  - Altitude: 76-2

## Requirements

### 4.4 Massing and Building Design

The massing of a building and the design of a building façade can create an attractive development and edge to the street. Building exteriors which face a street form part of the public realm and can affect the use and perception of adjacent pedestrian areas. Well designed buildings will enhance pedestrian use along the street and create a strong sense of neighbourhood pride.

## Rationale

Both architectural and site design are important to achieving high quality spaces. A building’s exterior should be designed with regard to the immediate context of the site.

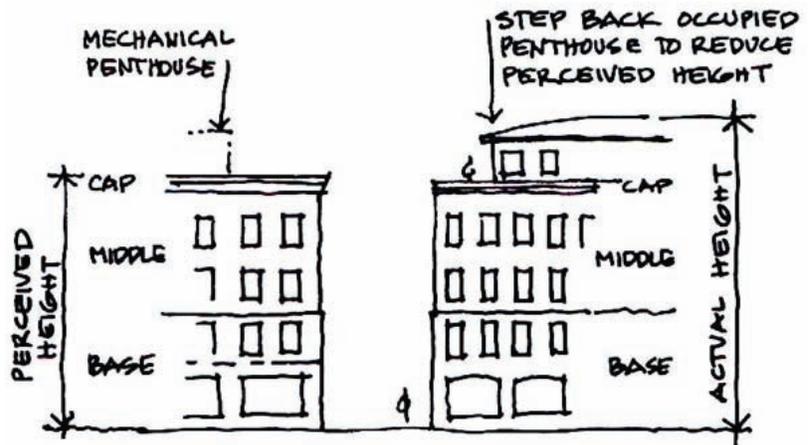
1. The principal building facades should be oriented toward the public street and not the parking lots or other areas.

## Guidelines



Apartment building oriented to street with commercial uses at grade

2. Building designs should typically incorporate the concept of base, middle and cap to create visual interest at grade and reduce the scale of taller buildings. The architectural style and scale of the building should be considered and appropriate design strategies created.





Apartment building has a base defined by a cornice line, middle and a cap with an articulated roof line

3. The main facades should have sufficient translucent glazing to provide casual surveillance of outdoor areas.
4. The main entrances to a building should be emphasized through the use of canopies and other treatments that will provide both visual identification as well as weather protection for pedestrians.



Restaurant has a tower element at the main entrance

5. Tall buildings located close to the street should have their upper floors stepback beyond the base floors to allow sunlight to reach the street, minimize shadow impacts and reduce the scale of the building as perceived along the street.

6. Building design should break up large building facades at street level and avoid flat or blank walls. Where large sections of blank wall are unavoidable, architectural techniques such as modulation, display windows, textures and colour changes can be used to enhance the elevation.



Long elevation and blank wall condition addressed with articulation, materials and colours

7. In urban neighbourhoods with buildings close to lot lines, buildings that abut lower or higher scale buildings should be designed to ensure a transition of scale. Building size and the location of elements such as windows, cornices and roofs can be used to scale and proportion buildings that transition with adjacent structures.



Building steps down to respect height of existing buildings

8. In urban neighbourhoods, designs that compliment the more elaborate existing buildings in the degree of complexity and detailing are encouraged.



The new building on the right maintains the established street setback and uses peaked roof lines to complement the existing built form

#### 4.5 Skyline and Rooftops

City skylines are recognized by their tall buildings. Signature buildings often serve as landmarks and points of orientation for pedestrians. Hamilton's skyline is visible from many vantage points given its location on Lake Ontario and below the Niagara Escarpment.

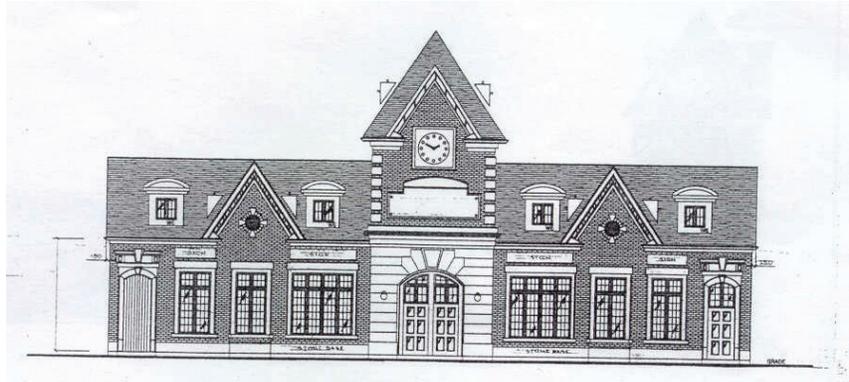
#### Rationale

The shape and massing of the upper portions of a building should be designed to create interest in the Hamilton skyline and the upper portion of buildings.

Many buildings contain rooftop mechanical equipment that, if left untreated, can detract from the overall building design. Screening of roof top equipment can also reduce noise transferred to adjacent properties.

1. Roof tops should be designed to have some identifiable form. Square or flat roof tops should generally be avoided unless it is appropriate for architectural style or use of rooftop decks and stormwater management is proposed. Partial roofs can be used to hide large flat roofs

#### Guidelines



Building elevation shows articulated roofline with peaks, dormers and tower

2. For apartment buildings, portions of the roofs should be considered for decks or patio space.
3. Roof top mechanical equipment should be enclosed or screened to compliment the overall building shape and form and to reduce noise transferred to adjacent properties. The design of the screening should be integrated with the building design.



Mechanical equipment is screened through roof design on commercial building



Roof design incorporates rooftop equipment and elevator penthouse to provide an attractive skyline

#### **4.6 Design of Buildings on Infill Sites**

Within established areas of the city, the character of neighbourhoods has been created by the existing buildings and streetscape elements. Undeveloped sites have the potential to strengthen and enhance this existing character while encouraging growth through well designed developments. Infilling these properties should be given careful consideration to enhance existing streetscapes and compliments existing buildings.

#### **Rationale**

**Guidelines**

1. New building design should complement established neighbourhood character through consideration of the following:
  - new buildings should be scaled to existing adjacent structures;
  - existing setbacks and building heights should be respected in determining an appropriate setback and height of new buildings;
  - the proportions and elements of existing buildings should be used where possible to determine an appropriate relationship for new buildings;
  - roof profiles, windows, entrances and porches that are predominant within the streetscape should be considered in the design of new buildings; and,
  - where possible, materials of new construction should be selected from the variety of materials found within the existing neighbourhood.



Infill development uses building setbacks, massing, window sizes, roof pitch and materials sympathetic to the existing neighbourhood character

